

Sheet 1

Problem 1

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
#include<iostream.h>
void main()
{
double employee[3][5],sum=0.0,average[3];
for(int i=1;i<=3;i++)
{
    cout<<"Department Number ( "<<i<<" )"<<"\n  Enter  the
employees salary : "
<<endl;
    for (int j=0;j<5;j++)
    {
        cin>>employee[i][j];
        sum+=employee[i][j];
    }
    average[i]=sum/5.0;
    cout<<"The average is : "<<average[i]<<"\n \n";
}
}
```

Problem 2

```
// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
#include<iostream.h>
void main()
{
int array[3][3],i,j;
cout<<"Please enter the array elements : "<<endl;
for(i=0;i<3;i++)
{
    for (j=0;j<3;j++)
    {
        cin>>array[i][j];
    }
}
cout<<"The original array elements : "<<"\n\n";
for(i=0;i<3;i++)
{
    for (j=0;j<3;j++)
    {
        cout<<array[i][j]<<endl;
    }
}
cout<<"The doubled array elements : "<<"\n\n";
for(i=0;i<3;i++)
```

```

{
    for (j=0;j<3;j++)
    {
        cout<<2*array[i][j]<<endl;
    }
}
}

```

Problem 3

```

// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
#include<iostream.h>
int main()
{
int i,j,a1[3][3],a2[3][3],sum[3][3];
cout<<"Enter the elements for the first array: ";
for (i=0;i<3;i++)
{
    for (j=0;j<3;j++)
        cin>>a1[i][j];
}
cout<<"Enter the elements for the second array: ";
for (i=0;i<3;i++)
{
    for (j=0;j<3;j++)
        cin>>a2[i][j];
}
for (i=0;i<3;i++)
{
    for (j=0;j<3;j++)
        sum[i][j]=a1[i][j]+a2[i][j];
}
for (i=0;i<3;i++)
{
    for (j=0;j<3;j++)
        cout<<sum[i][j]<<" ";
}
return 0;
}

```

Problem 4

```

// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
#include<iostream.h>
int main()
{
int i,j,array[2][3]={1,3,5},{2,4,6}};
for (i=0;i<2;i++)
{

```

```

for (j=0;j<3;j++)
{
    if (array[i][j]%2!=0)
        array[i][j]=10;
}
}
for (i=0;i<2;i++)
for (j=0;j<3;j++)
{
    cout<<array[i][j]<<" ";
}
return 0;
}

```

Problem 5

```

// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
#include<iostream> // allows program to output data to the screen
int main()
{
    int i,j,k,sum=0,a[3][3], result[3];
    cout<<"Enter the elements of the array: ";
    for (i=0;i<3;i++)
    {
        for (j=0;j<3;j++)
        {
            cin>>a[i][j];
            sum+=a[i][j];
        }
        result[i]=sum;
        sum=0;
    }
    for (k=0;k<3;k++)
        cout<<result[k]<<" ";

    return 0;
}

```

Problem 6

```

// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to transpose the elements of an array of
// integers.
#include<iostream> // allows program to output data to the screen
using std::cout;
using std::cin;
using std::endl;
// function main begins program execution
int main()

```

```

{
int x,y,a[3][3],temp[3][3];    // Variables declaration
cout<<"Enter the elements for the original array: ";
// The user enters the elements of the array
for (x=0;x<3;x++)
{
for (y=0;y<3;y++)
    cin>>a[x][y];
}
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
    {
        temp[x][y]=a[x][y]; //copy the original array into a temporary
array
    }
}
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
    {
        a[x][y]=temp[y][x]; // Replacing each columns with each rows
    }
}

cout<<"output of the transposed array: "; //Printing the result of the
array
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
        cout<<a[x][y]<<" ";
}
return 0;    // indicate that program ended successfully
} // end function main

```

Problem 7

```

// Computers & control Engineering Dept. - First Year Students
// Computer Programming(2) - Second Term - 2011/2012
// This program used to multiplying two arrays of integers.
#include<iostream> // allows program to output data to the screen
using std::cout;
using std::cin;
using std::endl;
// function main begins program execution
int main( )
{

```

```

int x,y,m1[3][3],m2[3][3],m3[3][3]; // Variables and arrays
declaration
cout<<"Enter the elements for the first array: ";
// The user enters the elements of the first array
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
        cin>>m1[x][y];
}
cout<<"Enter the elements for the second array: ";
// The user enters the elements of the second array
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
        cin>>m2[x][y];
}
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
    {
        int value=0;
        for (int k=0;k<3;k++)
        {
            // adding each element of the first array with its corresponding
            element in the second array
            value+=m1[x][k]*m2[k][y];
        }
        m3[x][y]=value;
    }
}
//Printing the result of the array
for (x=0;x<3;x++)
{
    for (y=0;y<3;y++)
        cout<<m3[x][y]<<" ";
}
return 0; // indicate that program ended successfully
} // end function main

```